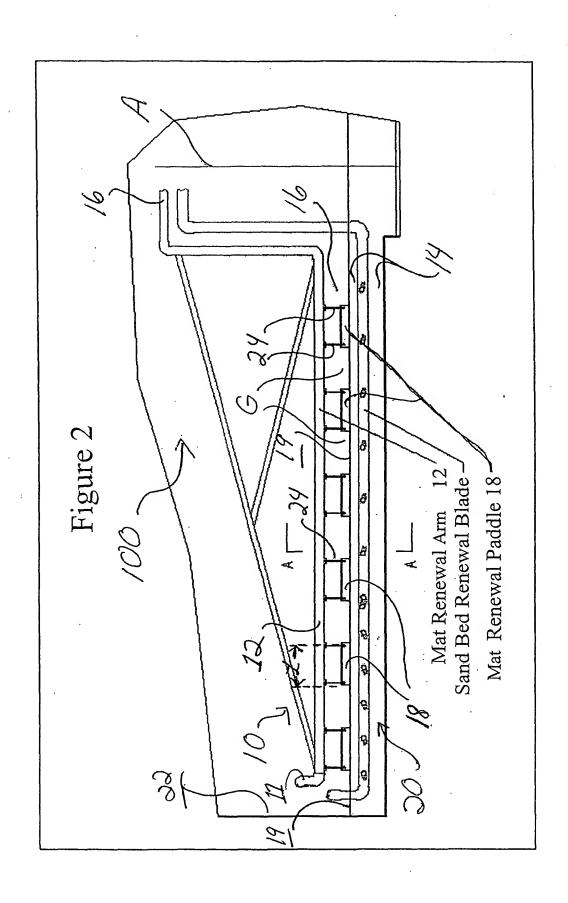


(PRIOR ART)



## Figure 3

Mat/Sand Surface Renewal Paddle (18)

Material to be Filtered

✓ Sludge Mat Renewal Arm / ス

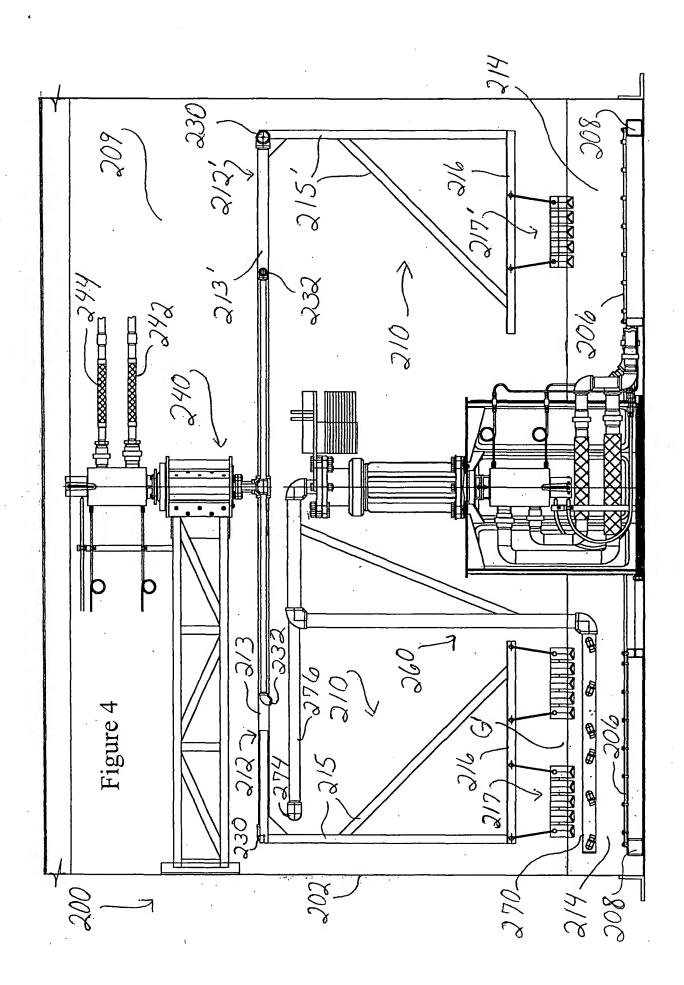
- Biomass " $\mathcal{M}$ "

- Sand Bed Renewal Blade

-Sand Bed 14

~ Tank Floor

SECTION A-A Screen for Reactor Effluent



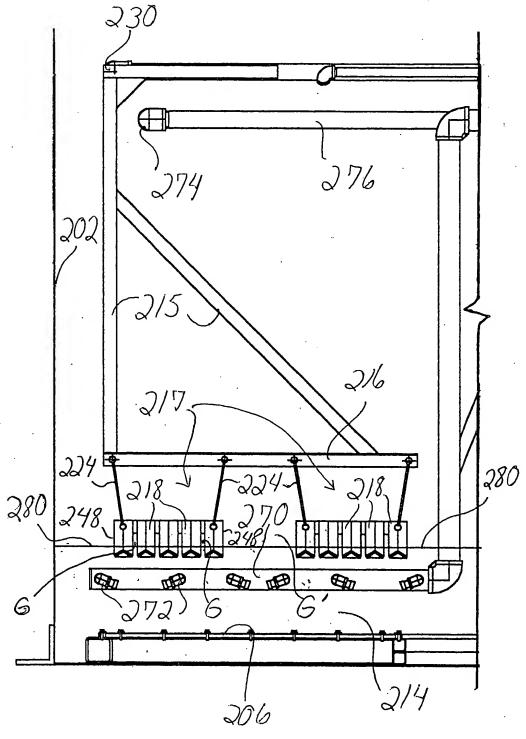
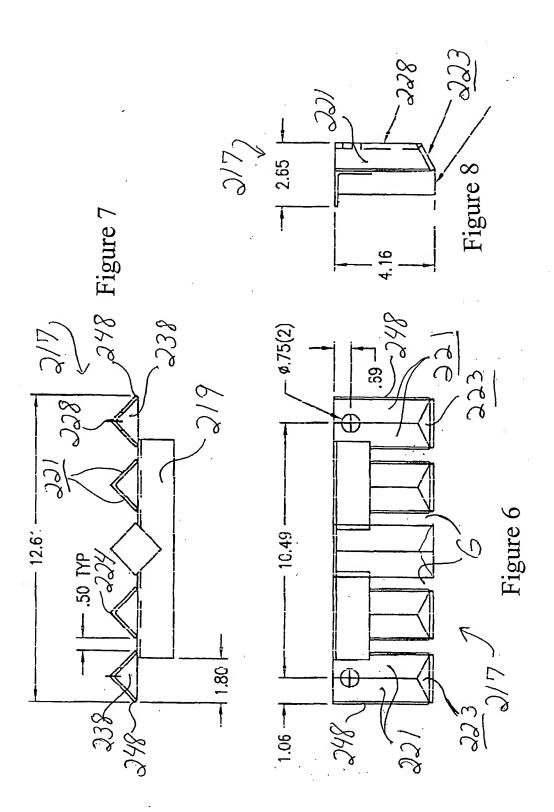
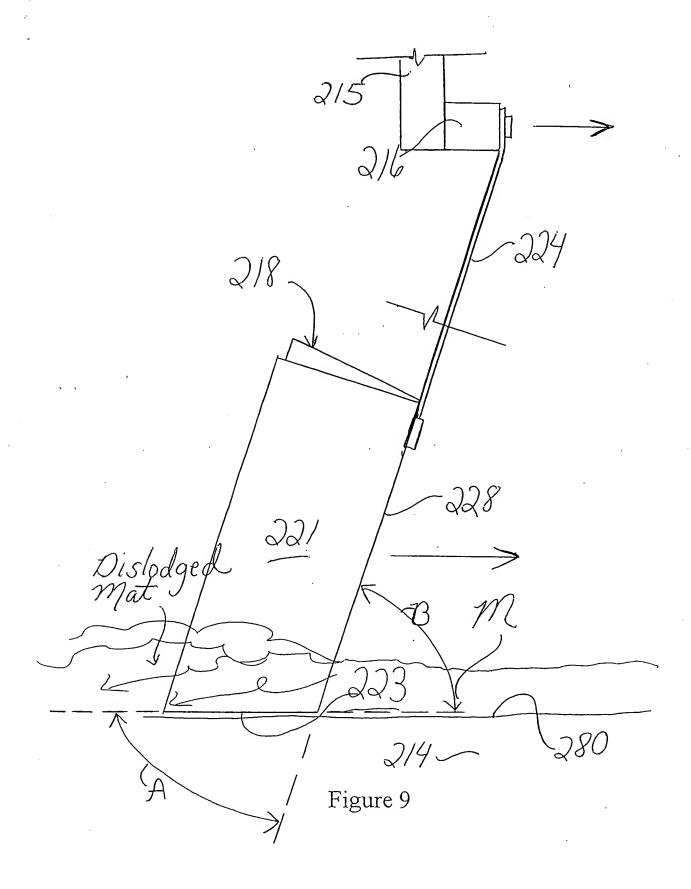
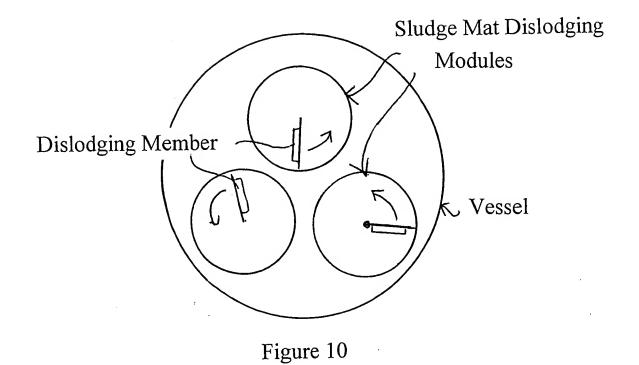


Figure 5







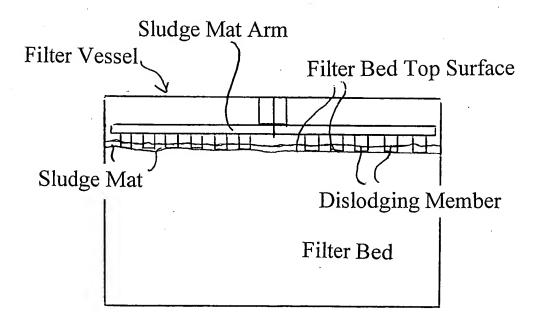


Figure 11

## A Comparison of Flow Performance with and wo Rake Invention

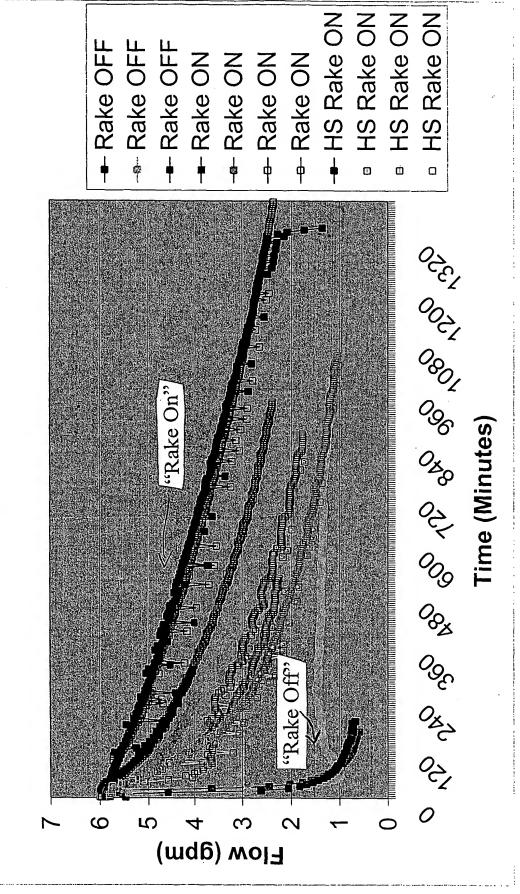


Figure 12

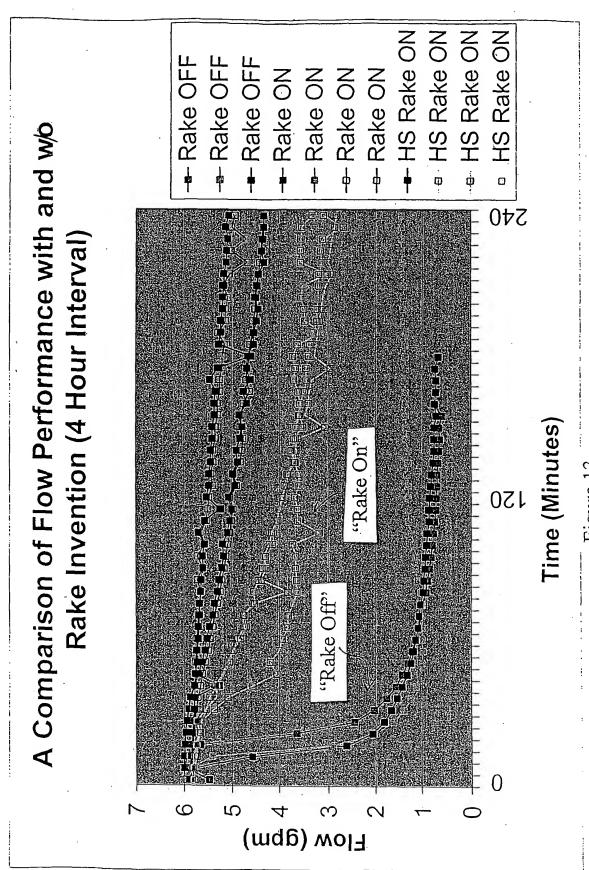
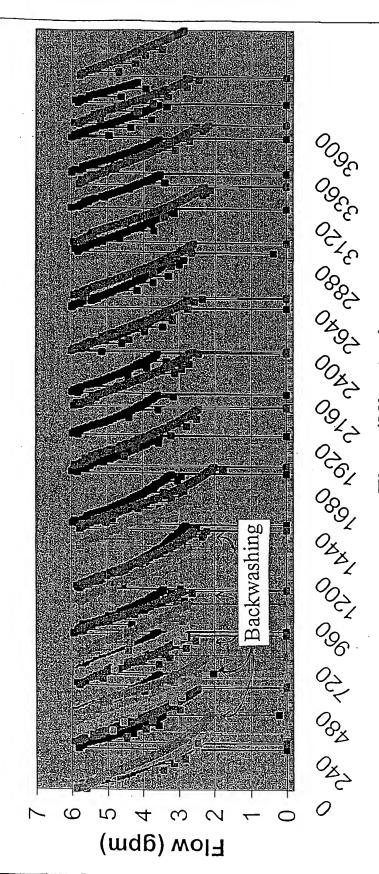


Figure 13

## Continuous Operation @ Various Underdrain Capacities



Time (Minutes)

-- 100% Open Underdrain -- 60% Open Underdrain

--- 24% Open Underdrain 40% Open Underdrain

Figure 14